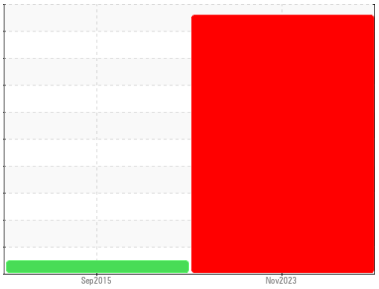
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
HARRIS HRB10 HRB-BALL VALVE (S/N 2887)
Component
Hydraulic System
Fluid
NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to metal particles present in this sample.

Wear
The iron level is severe. High concentration of visible metal present.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PTK0004141**	PTKM2260892	---
Sample Date		Client Info		**21 Nov 2023**	14 Sep 2015	---
Machine Age	hrs	Client Info		**29090**	16951	---
Oil Age	hrs	Client Info		**0**	0	---
Oil Changed		Client Info		**N/A**	N/A	---
Sample Status				**SEVERE**	NORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**82**	10	---
Chromium	ppm	ASTM D5185m	>10	**<1**	0	---
Nickel	ppm	ASTM D5185m	>10	**0**	0	---
Titanium	ppm	ASTM D5185m		**2**	<1	---
Silver	ppm	ASTM D5185m		**0**	0	---
Aluminum	ppm	ASTM D5185m	>10	**17**	2	---
Lead	ppm	ASTM D5185m	>10	**2**	0	---
Copper	ppm	ASTM D5185m	>75	**20**	10	---
Tin	ppm	ASTM D5185m	>10	**0**	0	---
Antimony	ppm	ASTM D5185m		**---**	0	---
Vanadium	ppm	ASTM D5185m		**<1**	0	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

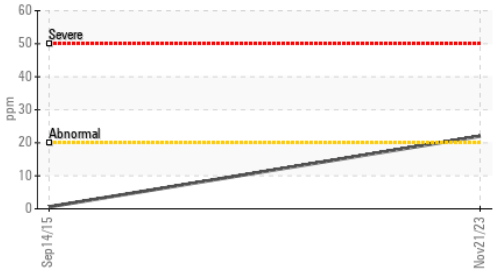
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	---
Barium	ppm	ASTM D5185m		**0**	0	---
Molybdenum	ppm	ASTM D5185m		**1**	0	---
Manganese	ppm	ASTM D5185m		**<1**	0	---
Magnesium	ppm	ASTM D5185m		**28**	25	---
Calcium	ppm	ASTM D5185m		**39**	49	---
Phosphorus	ppm	ASTM D5185m		**286**	267	---
Zinc	ppm	ASTM D5185m		**312**	373	---
Sulfur	ppm	ASTM D5185m		**4022**	3343	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**22**	<1	---
Sodium	ppm	ASTM D5185m		**63**	2	---
Potassium	ppm	ASTM D5185m	>20	**0**	0	---

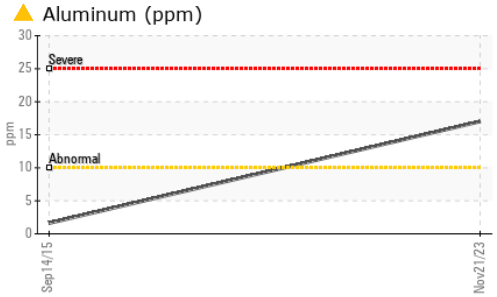
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**---**	708	---
Particles >6µm		ASTM D7647	>1300	**---**	385	---
Particles >14µm		ASTM D7647	>160	**---**	65	---
Particles >21µm		ASTM D7647	>40	**---**	22	---
Particles >38µm		ASTM D7647	>10	**---**	3	---
Particles >71µm		ASTM D7647	>3	**---**	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**---**	17/16/13	---

OIL ANALYSIS REPORT

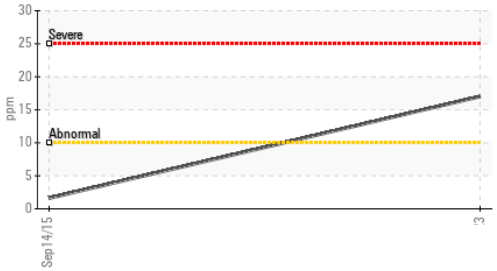
Silicon (ppm)



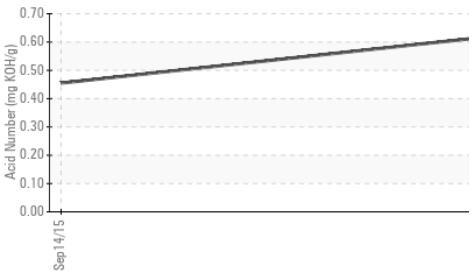
Aluminum (ppm)



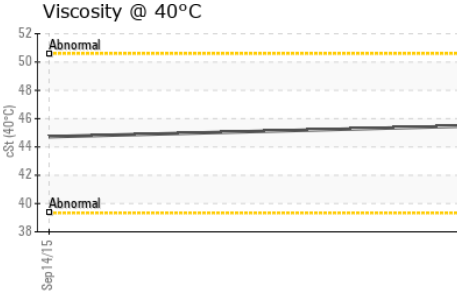
Aluminum (ppm)



Acid Number



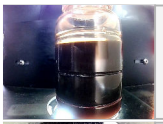
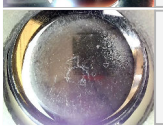
Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.62**	0.455	---

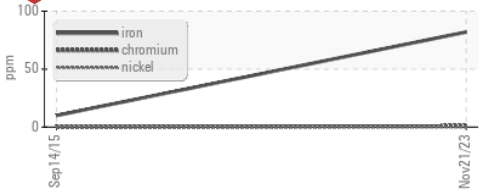
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ **HEAVY**	VLITE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**NORML**	NORML	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	---
Free Water	scalar	*Visual		**NEG**	NEG	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		**45.5**	44.72	---

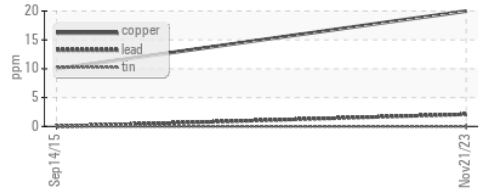
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

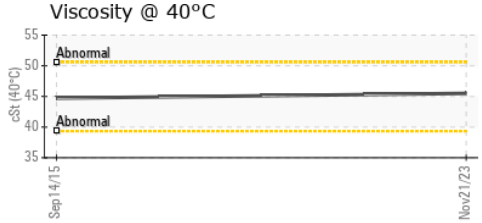
Ferrous Alloys



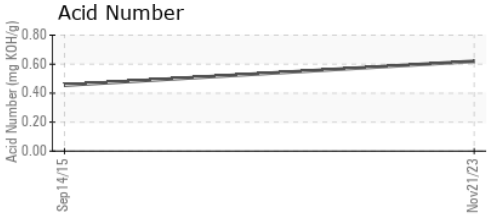
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PTK0004141
Lab Number : 06015737
Unique Number : 10754881
Test Package : MOB 2

Received : 22 Nov 2023
Diagnosed : 27 Nov 2023
Diagnostician : Jonathan Hester

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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